REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 8-11, 13-16, and 18-19 are presently active in this case, Claims 8 and 13 having been amended, Claims 12 and 17 having been canceled without prejudice, and Claims 18-19 having been added by way of the present Amendment.

Claim 8 was rejected under 35 U.S.C. 102(b) as being anticipated by Csanitz et al. (U.S. Patent No. 4,437,971). Claims 9-11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Csanitz et al. in view of page 2, line 4, of the present application. Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Csanitz et al. in view of either Olson (U.S. Patent No. 5,984,138) or Heinrichs (DE 42 24 131 A1). Claims 13, 14, 16, and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Csanitz et al. in view of Head, Jr. et al. (U.S. Patent No. 4,428,214). Claim 15 was rejected under 35 U.S.C. 103(a) as being unpatentable over Csanitz et al. in view of Head, Jr. et al. and further in view of page 2, line 4, of the present application.

Independent Claim 8 has been amended to incorporate the subject matter of Claim 12, and independent Claim 13 has been amended to incorporate the subject matter of Claim 17. Specifically, Claims 8 and 13 have been amended to recite that the bush has an interior portion and an exterior portion, where the interior portion extends further within an interior of the pipe element than the exterior portion extends beyond an exterior of the pipe element. Accordingly, the Applicants submit that the rejections of the only rejections that have not been rendered moot by the amendments to independent Claims 8 and 13 are the rejections of Claims 12 and 17. The Applicants respectfully request the entry of the amendments to Claims 8 and 13 set forth herein as the amendments reduce the number of issues for appeal.

The Csanitz et al. reference describes an electrochemical oxygen sensor having a reference electrode (22) placed within a chamber (21) which has included therein granules (39). The granules (39) are made of a material inert with respect to oxygen and having a surface hardness at least as hard as the reference electrode (22) so that, upon subjection of the sensor, when coupled to the exhaust system of an internal combustion engine, to vibrations, shocks and jolts, the granules will move in the chamber, rub against the electrode, and hence keep the electrode surface activated and free from contamination which may have penetrated with ambient air. The Figure depicts an exhaust component (E) having a threaded portion extending outward from the exhaust component and configured to receive the sensor (10) such that openings (20) in the sensor are provided within the interior of the exhaust component (E) to permit access of gas to be measured.

As noted in the outstanding Official Action, the Csanitz et al. reference does not disclose a bush having an interior portion and an exterior portion, where the interior portion extends further within an interior of the pipe element than the exterior portion extends beyond an exterior of the pipe element, as recited in Claim 8. The Official Action cites the Olson and the Heinrichs references for the teaching of a pipe element having exterior and interior portions. The Applicants respectfully submit that the combination of references set forth in the Official Action with respect to Claim 12, whose subject matter is now recited in Claim 8, is improper since the combined references teach away from each other.

With regard to Claim 8, the Olson reference describes tanks with bushings formed by flowdrilling holes in the tanks. The bushings have smooth bores which receive push-to-connect couplings. The bushing (42) includes a bore (44) defined by a cylindrical surface (46), and an exterior rim (48). The Applicants respectfully submit that the Olson reference should not be combined with the Csanitz et al. reference because the cylindrical surface (46)

that extends within the tank taught in the Olson reference would adversely affect the operation of the sensor described in the Csanitz et al. reference. Specifically, the cylindrical surface (46) of the Olson reference would partially or completely cover the openings (20) in the sensor of the Csanitz et al. reference, thereby restricting to flow of gas to be measured to the sensor (10). Additionally, none of the references suggest extending the sensor (10) of the Csanitz et al. reference further within the exhaust component (E), as such a modification would impede the flow of exhaust gas therein. The Olson reference is concerned with providing a bushing (42) for a storage tank, and is not concerned with a configuration that is advantageous for an exhaust device for an internal combustion engine. One of skill in the art would not have been motivated to combine the bushing (42) of the Olson reference with the sensor (10) of the Csanitz et al. reference to arrive at the invention recited in Claim 8 of the present application. Additionally, the Applicants note that the bushing (42) of the Olson reference is specifically designed to receive a push-to-connect coupling, and does not include threads.

With regard to Claim 8, the Heinrichs reference describes a method of producing a connection socket on a pressure hose. The Heinrichs reference describes placing a disc (3) in a hole drilled in the side of a tube, making a flat surface (15) on top of the deformed disc and then making threads (17) within a bore (13). The Applicants respectfully submit that the Heinrichs reference should not be combined with the Csanitz et al. reference because the bore (13) that extends within the pressure hose taught in the Heinrichs reference would adversely affect the operation of the sensor described in the Csanitz et al. reference. Specifically, the bore (13) of the Heinrichs reference would partially or completely cover the openings (20) in the sensor of the Csanitz et al. reference, thereby restricting to flow of gas to be measured to the sensor (10). Additionally, none of the references suggest extending the sensor (10) of the

Csanitz et al. reference further within the exhaust component (E), as such a modification would impede the flow of exhaust gas therein. One of skill in the art would not have been motivated to combine the bore (13) of the Heinrichs reference with the sensor (10) of the Csanitz et al. reference to arrive at the invention recited in Claim 8 of the present application.

With regard to Claim 13, the Head, Jr. et al. reference describes a flow drilling process and drill therefor. The Head, Jr. et al. reference describes a flow drilling tool including a blunt-ended prepunch portion for punching a circular slug from the workpiece as the tool is rotated and moved axially with respect to the workpiece. Thereafter, a circular forming portion is rotated in contact with the workpiece to increase the length and diameter of the punched hole. The process forms a rimmed hole or bearing structure (88) having an upper rim (82) formed on the tool-side of the workpiece, and a lower rim formed on the opposite side of the workpiece. The Applicants respectfully submit that the Head, Fr. et al. reference should not be combined with the Csanitz et al. reference because the bearing structure (88) that extends within the workpiece taught in the Head, Jr. et al. reference would adversely affect the operation of the sensor described in the Csanitz et al. reference. Specifically, the bearing structure (88) of the Head, Jr. et al. reference would partially or completely cover the openings (20) in the sensor of the Csanitz et al. reference, thereby restricting to flow of gas to be measured to the sensor (10). Additionally, none of the references suggest extending the sensor (10) of the Csanitz et al. reference further within the exhaust component (E), as such a modification would impede the flow of exhaust gas therein. One of skill in the art would not have been motivated to combine the bearing structure (88) of the Head, Jr. et al. reference with the sensor (10) of the Csanitz et al. reference to arrive at the invention recited in Claim 13 of the present application.

Claims 9-11, 14-16, and 18-19 are considered allowable for the reasons advanced for Claims 8 and 13 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claims 8 and 13.

Consequently, in view of the above discussion, it is respectfully submitted that Claims 8-11, 13-16, and 18-19 are patentably distinguishing over the cited art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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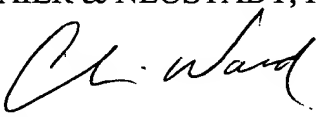

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IN THE CLAIMS

8. (Once Amended) An exhaust device for an internal combustion engine, said exhaust device comprising:

a measuring transducer configured to analyze a flow of exhaust gases from the engine; and

a pipe element adapted to carry the flow of exhaust gases from the engine, said pipe element having an integral housing in which said measuring transducer is mounted, said housing including a threaded hole extending through a bush made directly through a wall of said pipe element,

wherein said bush has an interior portion and an exterior portion, said interior portion extending further within an interior of said pipe element than said exterior portion extends beyond an exterior of said pipe element.

12. (Canceled)

13. (Once Amended) A process for making an exhaust device for an internal combustion engine, said process comprising the steps of:

forming an integral housing in a pipe element adapted to carry a flow of exhaust gases from the engine, the housing being formed from a flow-drilling operation comprising drilling through a wall of the pipe element with a tool at a speed and a penetration force adapted to cause melting and upsetting of a material of the wall around the tool in proportion to an advance of this tool until a bush of required height and diameter is obtained, wherein the bush has an interior portion and an exterior portion, the interior portion extending further within an interior of the pipe element than the exterior portion extends beyond an exterior of the pipe element;

tapping a hole through the bush to form internal threads in the hole; and

mounting within the housing a measuring transducer configured to analyze a flow of exhaust gases from the engine.

17. (Canceled)

18. (New)

19. (New)